Please amend the application claims as follows:

IN THE CLAIMS

1. (Previously presented) An enhanced Compton gamma camera used in nuclear medicine, comprising:

a plurality of radiation detector modules, wherein each module includes:

at least one edge-on radiation detector that measures electronically-determined interaction height ,

a communication link for transferring data between the module and a computer system.

2. (Previously presented) The enhanced Compton gamma camera of Claim 1 wherein detector modules includes ~~strip~~ face-on radiation detectors that measure electronically-determined interaction depth.

3. (Previously presented) The enhanced Compton gamma camera of Claim 1 wherein detector modules ~~includes~~ include edge-on radiation detectors with different properties including at least one of: detector material, spatial resolution, energy resolution, response time, readout rate, and noise characteristics.

4. (Canceled) The enhanced Compton gamma camera of Claim 1 wherein detector modules have different properties.

5. (Previously presented) The enhanced Compton gamma camera of Claim 1 wherein the edge-on radiation detector is a dual-sided parallel strip semiconductor detector.

6. (Previously presented) The enhanced Compton gamma camera of Claim 1 wherein the edge-on radiation detector is a dual-sided crossed strip semiconductor detector.

7. (Previously presented) The enhanced Compton gamma camera of Claim 1 wherein the edge-on radiation detector is a dual-sided 2-D pixelated array semiconductor detector.

8. (Previously presented) The enhanced Compton gamma camera of Claim 1 wherein detectors are stacked so as to extend the attenuation length presented to the incident radiation .

9. (Previously presented) The enhanced Compton gamma camera of Claim 8 wherein ~~the detector layers use at least two different materials~~ the stacked detectors are comprised of detector layers that use at least two different materials.

10. (Previously presented) The enhanced Compton gamma camera of Claim 1 wherein edge-on detectors and detector modules can be adjusted by mechanical means including at least one of elevating, tilting, and rotating.

11. (Canceled) The enhanced Compton gamma camera of Claim 10 wherein near-edge-on imaging is implemented.

12. (Previously presented) The enhanced Compton gamma camera of Claim 1 comprising:

a coarse Compton collimator mounted ~~on~~ in front of the enhanced Compton gamma camera such that it restricts the acceptance angle of incident radiation.

13. (Canceled) ~~The coarse Compton collimator of Claim 12 wherein a radiation shield covers specific edge-on radiation detectors~~. A coarse Compton collimator

wherein a radiation shield covers alternate edge-on detectors in order to limit their direct exposure from the radiation source.

14. (Canceled) The enhanced edge-on Compton gamma camera of claim 1 wherein the camera is used to detect radiation.

15. (Canceled) The enhanced Compton gamma camera of Claim 1 wherein the camera operates as an enhanced edge-on Gamma camera.

16. (Previously presented) The enhanced edge-on gamma camera of Claim ~~15~~ 1 wherein the camera operates as an enhanced edge-on PET camera.

17. (Canceled) The enhanced edge-on gamma camera of claim 15 wherein the camera is used to detect radiation.

18. (Previously presented) The enhanced edge-on gamma camera of claim ~~15~~ 1 wherein the camera is used for radiographic imaging.

19. (Previously presented) The enhanced edge-on gamma camera of claim ~~15~~ 1 wherein the camera is used for radiographic CT imaging.

20. (Previously presented) The enhanced edge-on Compton gamma camera of claim 1 wherein the camera is irradiated from the side such that the incident radiation is parallel to the plane of the edge-on detector array.

21. (Previously presented) ~~An edge-on radiation detector used in nuclear medicine wherein interaction height information is used to determine sub-aperture resolution~~ A method for increasing the spatial and energy resolution of an edge-on radiation detector used in nuclear medicine, comprising:

irradiating the edge-on detector and measuring the relative signal strength versus interaction location in the direction of the aperture height,

developing a calibration data table,

applying the calibration table during radiation imaging permitting more accurate estimates of the interaction location and energy of a detected event.

22. (Canceled) The edge-on radiation detector of Claim 21 wherein the edge-on radiation detector is a semiconductor array detector.

23. (Canceled) The edge-on radiation detector of Claim 21 wherein the edge-on radiation detector is a scintillator array detector.

24. (Previously presented) The enhanced Compton gamma camera of Claim 1 wherein the edge-on radiation detector is at least one of a dual readout scintillator detector, a Phoswich scintillator detector, a pulse shape discrimination scintillator detector, a light sharing between crystal elements scintillator detector, and an offset front and back crystal array scintillator detector.